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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,829	12/23/1999	MASATSUGU HATANAKA	49481(551)	8004

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EXAMINER

NATIVIDAD, PHILIP SANA

ART UNIT PAPER NUMBER

2877

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/471,829

Applicant(s)

HATANAKA ET AL.

Examiner

Phil Natividad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 21-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 21-59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No. 11.

The restriction requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims drawn to an invention nonelected without traverse in Paper No. 11. A complete reply to the final restriction must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Auda et al. ('914).

5. Claims 19-20 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Auda et

al. Auda discloses directing light substantially perpendicular to a substrate (col. 9 line 19), receiving reflected light from it, and analyzing the light with a spectrometer that divides light according to wavelength then calculates thickness (col. 1, col. 8 lines 36-38) according to the intensity of a wavelength divided by the spectroscopy.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al. ('575). Sugiyama discloses (Fig. 2A, 1A) directing light substantially perpendicular to a substrate and analyzing film thickness by the intensity of reflected light.

As to claims 2 and 3, an optical fiber to/from substrate, and branching to a plurality of sites on the substrate, and an optical shutter to select between branches, are all notoriously well known in the art, of which Official Notice is taken. It would have been obvious to one of ordinary skill in the art to combine these with the given thickness-measuring at a location, for motivation of more flexibly/completely/rapidly measuring/mapping/characterizing the substrate, at multiple locations.

8. Claims 4-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al. Sugiyama discloses applicant's invention as recited in claims 1 and 19 above; further as to claims 4, 7, 10, and 20, Sugiyama discloses spectroscopy dividing light according to wavelength (col. 1 lines 55-57) and measuring intensity to calculate thickness (lines 58-61). As to claims 5, 8, 11 and 6, 9, 14, note that equations for calculating film thickness, given known wavelengths and known refractive indices (hence, known reflectivities), are known in the art: applicant's recited equations are functionally equivalent derivations of (n.b. certain differences in

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notation and discounting absorption coefficient k) Sugiyama's equations col. 6 lines 12 and 39 (prior art made of record not relied on: Kimba et al ('987) para.0054); further analogous derivations for the case of multi-layer (as to claims 6, 9, 14), rather than single-layer thin films, are obvious within this art; for motivation of analogously characterizing well-known multilayer thin films in the same manner. As to claims 12, 15, and 17, robot or automated means for handling substrates are notoriously well known in the art, for motivation of rapid and repeatable throughput. As to claims 13, 16, and 18, it is notoriously well known to use optical film thickness-measuring in-line within a film growth apparatus for motivation of more rapid feedback during the process, of which Official Notice is taken.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner can be directed to Phil Natividad whose telephone number is 703-306-5944. The examiner can normally be reached on Tuesday through Friday and alternating Mondays; and supervising patent examiner Frank G. Font can be reached at 703-308-4881.

In view of delays in mail delivery in recent days, we at the USPTO would like to encourage you to communicate with the USPTO via facsimile. Facsimile transmissions may be used for correspondence as set forth in 37 CFR 1.6 such as: amendments, petitions for extension of time, authorization to charge a deposit account, an IDS, terminal disclaimers, a notice of appeal, an appeal brief, CPAs under 37 CFR 1.53(d), and RCEs.

PTO Form 2038 should be used when authorizing payment by credit card; this form is maintained separate from the file to ensure confidentiality.

The USPTO has recently installed server software that enables us to automatically receive facsimile transmissions and route them to the appropriate groups. No special equipment is needed by our customers to use this system other than a regular facsimile machine. Each Technology Center has its own facsimile numbers associated with our server for Official replies to non-final Office actions and for Official replies to final Office actions. In addition, each Technology Center has a Customer Service Center on our server system, and can answer any general application status questions you might have, can provide Examiner information, and answer paper queries.

The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 or 703-308-7722 for regular communications and

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Tech Center 2800 Customer Service is at 703-306-3329 or 703-872-9317. Any inquiry of a general nature or relating to the status of this application or proceeding can also be directed to the receptionist whose telephone number is 703-308-0956.



Phil Natividad
Patent Examiner
psn
April 10, 2003



FRANK G. FONT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800